

**Chapter 5 The Periodic Table****Section 5.2 The Modern Periodic Table****(pages 130–138)**

*This section explains the organization of the modern periodic table and discusses the general properties of metals, nonmetals, and metalloids.*

**Reading Strategy (page 130)**

**Previewing** Before you read, complete the table by writing two questions about the periodic table on pages 132–133. As you read, write answers to your questions. For more information on this reading strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

| Questions About the Periodic Table |        |
|------------------------------------|--------|
| Question                           | Answer |
|                                    |        |
|                                    |        |

**The Periodic Law (pages 131–133)**

1. Is the following sentence true or false? In the modern periodic table, elements are arranged by increasing number of protons.  
\_\_\_\_\_
2. Explain why the number of elements per period varies. \_\_\_\_\_  
\_\_\_\_\_
3. Properties of elements repeat in a predictable way when atomic numbers are used to arrange elements into groups. This pattern of repeating properties is called the \_\_\_\_\_.

**Atomic Mass (page 134)**

4. Label the four types of information supplied for chlorine in the diagram.

|          |          |
|----------|----------|
| a. _____ | 17       |
| b. _____ | Cl       |
| c. _____ | Chlorine |
| d. _____ | 35.453   |

- a. \_\_\_\_\_ b. \_\_\_\_\_  
c. \_\_\_\_\_ d. \_\_\_\_\_

**Chapter 5 The Periodic Table**

5. Define atomic mass. \_\_\_\_\_
6. Circle the letter of each sentence that is true about a carbon-12 atom.
- It has 6 protons and 6 neutrons.
  - Scientists assigned a mass of 6 atomic mass units to the carbon-12 atom.
  - It is used as a standard for comparing the masses of atoms.
  - An atomic mass unit is defined as one twelfth the mass of a carbon-12 atom.
7. Is the following sentence true or false? Most elements exist as a mixture of two or more isotopes. \_\_\_\_\_
8. The mass of an atom of chlorine-37 is \_\_\_\_\_ than the mass of an atom of chlorine-35.
9. Is the following sentence true or false? All values are equally important in a weighted average. \_\_\_\_\_

**Classes of Elements (pages 135–136)**

10. Name the three categories into which elements are classified based on their general properties.
- \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
11. Is the following sentence true or false? All metals react with oxygen in the same way. \_\_\_\_\_
12. An important property of transition elements is their ability to form compounds \_\_\_\_\_.
13. Circle the letter of each sentence that is true about nonmetals.
- Nonmetals are poor conductors of heat and electric current.
  - Many nonmetals are gases at room temperature.
  - Some nonmetals are extremely reactive and others hardly react at all.
  - Nonmetals that are solids tend to be malleable.

**Variation Across a Period (page 138)**

14. Across a period from left to right, the elements become \_\_\_\_\_ metallic and \_\_\_\_\_ nonmetallic in their properties.
15. Circle the letter of each Period 3 element that is highly reactive.
- sodium
  - silicon
  - chlorine
  - argon